

Work Order ID: **56729**

March 5, 2010 9:59:52 AM



Page 1

Item ID: D3391-013

Accept



Setup Start



Revision ID:

Item Name: Mid Tube Assembly

Stop



Start Date: 05/03/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 17/03/2010 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan:

*DT*

Date: *10-3-05*

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D3391

Rev H

100

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-013

3-Drill pilot holes using DT8796 (including "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391

4-Open saddles and GHW holes to Ø0.375" except for fwd saddle hole of detail "J"

5-Remove .030" from Fwd indexing Ridge as per Dwg D3391

6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391

7-Deburr

8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,

9-Open wearplate holes of D3391-013 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"

10-Open wearplate holes of D3391-013 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391

*BE 10/03/09*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Item ID: D3391-013

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Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

11-Open .375" holes to .438" \*\*\*do not open fwd saddle holes\*\*\*

12- Locate electric step holes 41.5000" from fwd end and drill using DT 8393

13- Open electric step holes 0.391" per dwg D3391 (section L-L)

14- Open electric step holes 0.297" per dwg D3391 (section M-M)

15- Open electric step holes 0.250" per dwg D3391 (section LL-LL)

16- Locate D3391-021 in D3391-023 at 9.00" (see view z-z)

17- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previously drill .188" dia hole, using t-pins and clicos to ensure perfect allignment, open up previously tranfer drilled pilot holes in D3391-013/-011 to 0.438" dia. in D3391-011

18- Transfer drill 2 wearplate holes into D3391-011 using DT8217, locating from two previously drilled holes, drill remaining wearplate holes into D3391-011.

19- Locating from two fwd wearplate holes drill remaining 6 wearplate holes in D3391-011 using DT8937

20- Open 2 fwd wearplate holes in D3391-013 to .250" dia.

21- counterbore two aft wearplate holes in D3391-011 as per dwg

22- Open 12 wearplate holes in D3391-011 to 0.297" dia.

23- Deburr and blow out all chips from inside tube

BE 10/03/09

16/3/31

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries





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Item ID:	D3391-013	Accept		Setup	Start	
Revision ID:						
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Start Date:	05/03/2010	Start Qty:	1.00			
Required Date:	17/03/2010	Req'd Qty:	1.00			
Reference:						
				Cust Item ID:		
				Customer:		

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110  QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00  0.00	81064105						
120  HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1  Memo	0.00  0.00				1	11/04/15		
130  QC Quality Control	QC3- Inspect Part Finish  Memo	0.00  0.00				1		BE 10/04/06	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Skidtubes	0.00				1			
Skidtubes	Memo	0.00							
Skidtubes	Bond web in place as per Dwg D3391 & QSI 015. *****Ensure Web Alignment ***** B# M112429 Exe 12/8/30								
150	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control	Inspect each insert using DT8821								
160	Skidtubes	0.00							
Skidtubes	Memo	0.00							
Skidtubes	1-Weld crossbolt spacer as per dwg D3391 & QSI 004 2-grind weld flush								

K/R M113207

(x1)

BE10/04/12

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

170



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

*S w/05/04*

Memo

0.00

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

*S w/05/04*

Memo

0.00

190



Powdercoat

Powder Coating

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

*REALODINED*  
*M 11/4/841*

Memo

0.00

\*\*\*Use paint screws to mask inserts.\*\*\*

START TIME: *8:15*

OVEN TEMPERATURE: *320°*

FINISH TIME: *4:15*

*① BR 10-7-13. PD*

*① BR 10-7-13*

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
10-7-13		ADD TANT SEQUENCE PERMANENTLY. REALIGNED.	BA.	10-7-13	1		S 10/07/13

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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NOTE: Date & initial all entries



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Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

220



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

0.00

Memo

230



HandFinish

Hand Finishing

HandFinishing

0.00

0.00

Memo

Install inserts

240



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

0.00

Memo

Inspect thread of each insert using DT8821



Setup Start

Stop



S 10/07/20

=&gt; H 10/07/19

X1 0/

S 10/07/20

0

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

250



HandFinish

HandFinishing

0.00

Memo

0.00

=&gt; JH 10/07/19

KL

X

Hand Finishing

Assemble as per dwg D3391

260



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

S. 10/07/20

X

270



Packaging

Packaging

Identify as per dwg &amp; Stock Location: \_\_\_\_\_

0.00

used on w/o 56717

Memo

0.00

JH 10/09/20

KL

X

D412-742-041

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

MF  
10-7-20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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**NOTE:** Date & initial all entries

# Picklist Print

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Work Order ID: 56729

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Comments: IPP A 05.12.13 New Issue EC  
IPP B 06.02.09 Dwg rev.D EC  
IPP Rev:06-03-28 Update Manufacturing Instructions JLM  
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

AN960C10L

Purchased No

Each 388.0000 4.0000



washer NAS1149C 0332R

## Warehouse

## Loc Qty

## Loc Code

### Location

OFFSHORE

FG

100

103585

100

Main Warehouse

ST

288

112116

128

112612

160

D3672-1

Manufactured No

Each 1,618.000 10.0000



Phenolic Washer

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

1118

39275

19

42329

5

47628

94

52505

1000

Main Warehouse

ST117

500

51674

500

x4 sl 10/07/19

x10 sl 10/07/19

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IPP B 06.02.09 Dwg rev.D EC  
IPP Rev:06-03-28 Update Manufacturing Instructions JLM  
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

D2500-1-100

Manufactured No

100

Each

131.0000

1.0000



Skidtube, Extrusion

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

If

87

50251

87

Main Warehouse

ST

44

44

37065

MS27039C4-08

Purchased

No

100

Each

69.0000

4.0000



SCREW

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

69

69

17831

D3391-011

Manufactured

No

140

Each

0.0000

1.0000



Fwd Tube Assembly

1 BE 10/03/09  
44 81 10/02/19  
B56726 D 10/13/31

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IPP B 06.02.09 Dwg rev.D EC  
IPP Rev:06-03-28 Update Manufacturing Instructions JLM  
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

D3389-1

Manufactured No

210

Each

3.0000

1.0000



Web

B 56813 D M 10/4/16

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

LG

2

56624

2

Main Warehouse

ST

1

48244

1

ALS4-1032-225

Purchased

No

230

Each

6,116.000

10.0000



Insert

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

6116

107441

16

10768

6100

X10 M 10/07/19

10.04.12

D 3681-1

B 56802

x12

BE 10/04/12

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IPP Rev:06-03-28 Update Manufacturing Instructions JLM  
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

ALS4-428-165

Purchased No

230

Each

30.0000

4.0000



Inserts

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP

30

6989

30

D3591-1

Manufactured No

230

Each

37.0000

2.0000



Bushing

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

37

46105

29

47121

8

ALS4-1032-130

Purchased No

250

Each

1,142.000

26.0000



Insert

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

1142

110511

1142

x4 10/07/19

x2 10/07/19

x26 10/07/19

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Required Date: 17/03/2010

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IPP A 05.12.13 New Issue EC

Start Qty: 1.00

Required Qty: 1.00

IPP B 06.02.09 Dwg rev.D EC

IPP Rev:06-03-28 Update Manufacturing Instructions JLM

IPP rev D 07.03.14 dwg Rev F EC

AN3C4A

Purchased

No

250

Each

1,649.000 10.0000



BOLT

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

1649

M 114859

x10 24 10/07/19

112314

13

112720

12

112724

3

112829

1

112991

2

113121

64

113226

344

113644

110

113749

100

114103

500

114108

500

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IPP Rev:06-03-28 Update Manufacturing Instructions JLM  
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

AN960C10L Purchased No 250 Each 388.0000 10.0000



washer NAS1149C0332R

Warehouse Loc Qty Loc Code

Location

OFFSHORE

FG 100

M115000

x10 M1 10/07/19

103585 100

Main Warehouse

ST 288

112116 128

112612 160

AN960C416L Purchased No 250 Each 1,314.000 4.0000



WASHER

Warehouse Loc Qty Loc Code

Location

OFFSHORE

FG 44

104925 44

Main Warehouse

ST 1270

111916 2

112612 368

112794 500

112828 400

x4 M1 10/02/19

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Parent Item Name: Mid Tube Assembly

Comments: IPP A 05.12.13 New Issue EC  
IPP B 06.02.09 Dwg rev.D EC  
IPP Rev:06-03-28 Update Manufacturing Instructions JLM  
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

D3401-041

Manufactured No

250

Each

25.0000

1.0000



Tow Cap Assembly

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

25

36216

1

41931

1

46029

13

60316

10

D3564-13

Manufactured No

250

Each

36.0000

1.0000



Wearshoe

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP17

24

51611

3

56285

21

Main Warehouse

ST

12

45409

2

46495

10

7/9

x1 24 10/07/16

B57922

x1 24 10/07/16

March 5, 2010 9:59:50 AM

Shop Packet Print

Page 132

# Picklist Print

March 5, 2010 9:59:50 AM

Page 133

8/9

Work Order ID: 56729

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Start Date: 05/03/2010

Required Date: 17/03/2010

Comments: IPP A 05.12.13 New Issue EC  
 IPP B 06.02.09 Dwg rev.D EC  
 IPP Rev:06-03-28 Update Manufacturing Instructions JLM  
 IPP rev D 07.03.14 dwg Rev F EC

Start Qty: 1.00

Required Qty: 1.00

D3566-13

Manufactured No

250

Each

75.0000

1.0000



Gasket



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP

73

53461

73

Main Warehouse

ST

2

45717

1

50265

1

Y1 J1 10/07/19

D3672-1

Manufactured No

250

Each

1,618.000

4.0000



Phenolic Washer



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

1118

39275

19

42329

5

47628

94

52505

1000

Main Warehouse

ST117

500

51674

500

X4 J1 10/07/19

March 5, 2010 9:59:50 AM

Shop Packet Print

Page 133

# Picklist Print

March 5, 2010 9:59:50 AM

Page 134

2/9

Work Order ID: 56729

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Comments: IPP A 05.12.13 New Issue EC  
IPP B 06.02.09 Dwg rev.D EC  
IPP Rev:06-03-28 Update Manufacturing Instructions JLM  
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

D3672-3 Manufactured No

250

Each

524.0000 4.0000



Phenolic Washer

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST117

24

51596

24

Main Warehouse

ST77

500

55560

500

MS27039C1-09

Purchased No

250

Each

30.0000 4.0000



SCREW

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

30

17831

30

135770A

x4 x1 10/07/19

x4 x1 10/07/19

March 5, 2010 9:59:50 AM

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Page 134

SHOP COPY

RETURN TO

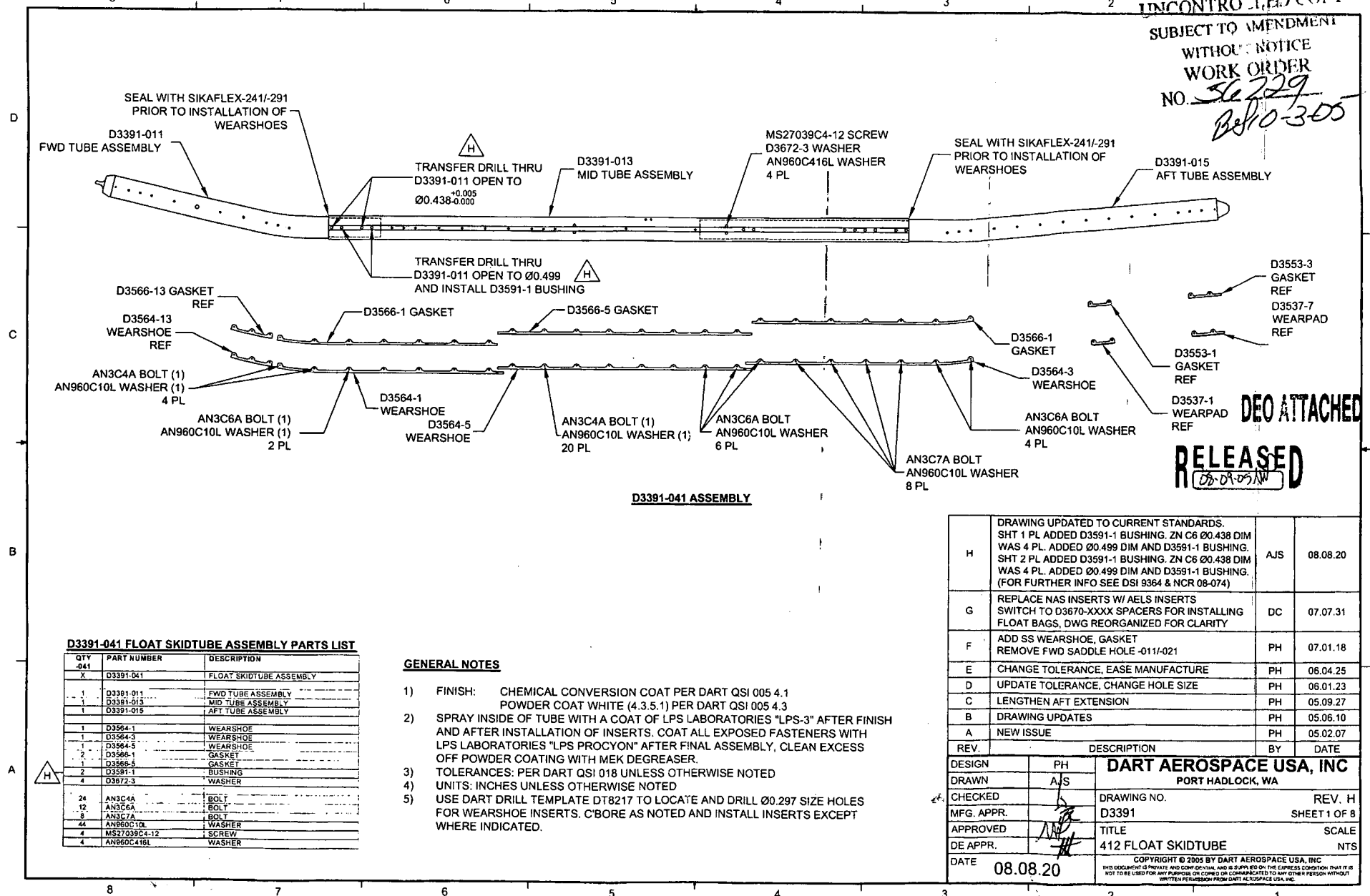
ENGINEERING

UNCONTROLLED COPY

SUBJECT TO AMENDMENT

WITHOUT NOTICE

WORK ORDER

NO. *36229**Before 300*

SEAL WITH SIKAFLEX-241/291 PRIOR TO INSTALLATION OF WEARSHOES

D3391-021 FWD TUBE ASSEMBLY

TRANSFER DRILL THRU D3391-021 OPEN TO  $\pm 0.005$  Ø0.438-0.000

D3391-023 MID TUBE ASSEMBLY

SEAL WITH SIKAFLEX-241/291 PRIOR TO INSTALLATION OF WEARSHOES

D3391-025 AFT TUBE ASSEMBLY

TRANSFER DRILL THRU D3391-021 OPEN TO Ø0.499 AND INSTALL D3591-1 BUSHING

D3566-13 GASKET REF

D3564-13 WEARSHOE REF

AN3C4A BOLT AN960C10L WASHER 4 PL

AN3C6A BOLT AN960C10L WASHER 2 PL

D3566-1 GASKET

D3566-5 GASKET

D3564-1 WEARSHOE

D3564-5 WEARSHOE

AN3C4A BOLT AN960C10L WASHER 20 PL

AN3C6A BOLT AN960C10L WASHER 6 PL

AN3C7A BOLT AN960C10L WASHER 8 PL

D3566-1 GASKET

D3564-3 WEARSHOE

AN3C6A BOLT AN960C10L WASHER 4 PL

D3553-3 GASKET REF

D3553-1 GASKET REF

D3537-7 WEARPAD REF

D3537-1 WEARPAD REF





### D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

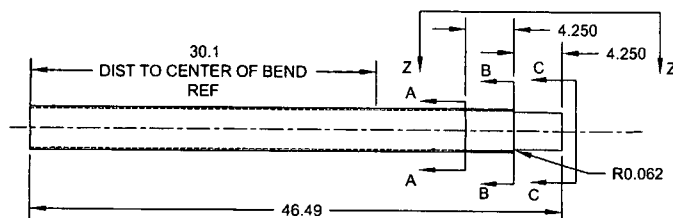
QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKID/TUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
1	D3566-1	GASKET
2	D3568-5	GASKET
2	D3581-1	BUSHING
24	AN304A	BOLT
12	AN306A	BOLT
8	AN307A	BOLT
44	AN309C10I	WASHER

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH  
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH  
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES  
FOR WEARSHOE INSERTS. C.BORE AS NOTED AND INSTALL INSERTS EXCEPT  
WHERE INDICATED.

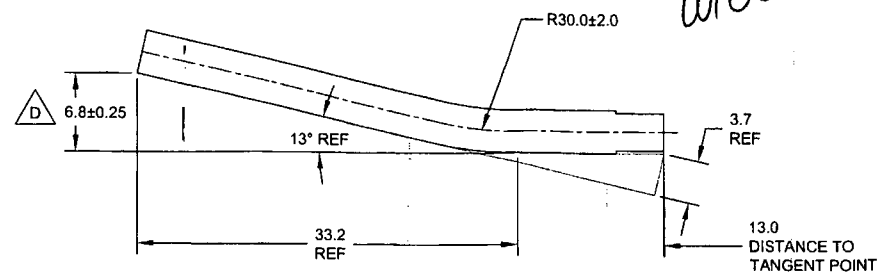
DEO ATTACHED

RELEASED  
08-09-05

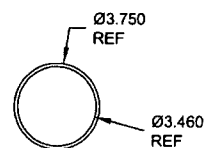
DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 2 OF 8
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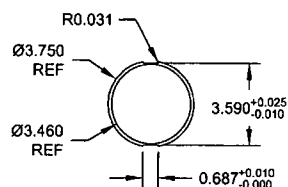
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



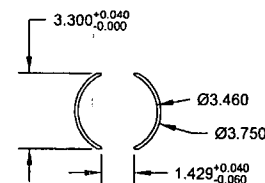
**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)



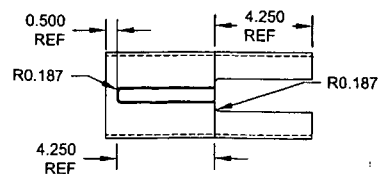
**SECTION A-A**  
SCALE 2X



**SECTION B-B**  
SCALE 2X



**SECTION C-C**  
SCALE 2X

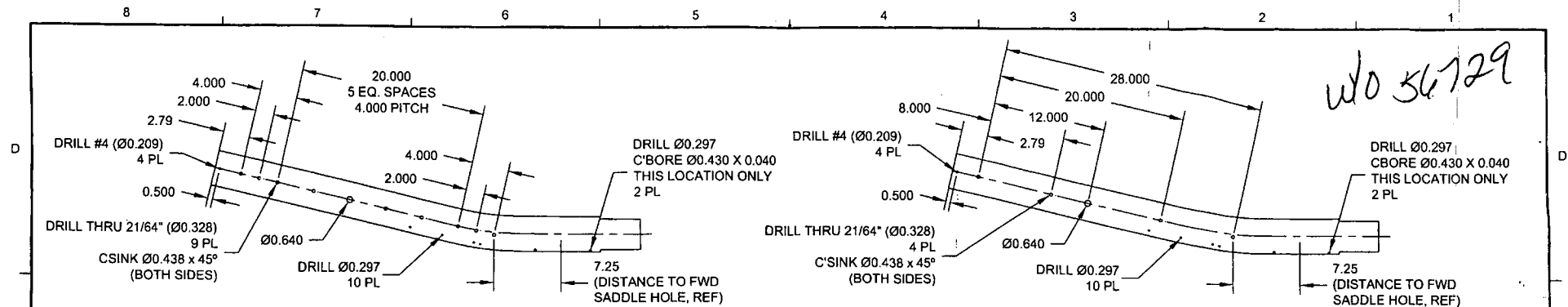


**VIEW Z-Z**  
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28 JUN 85

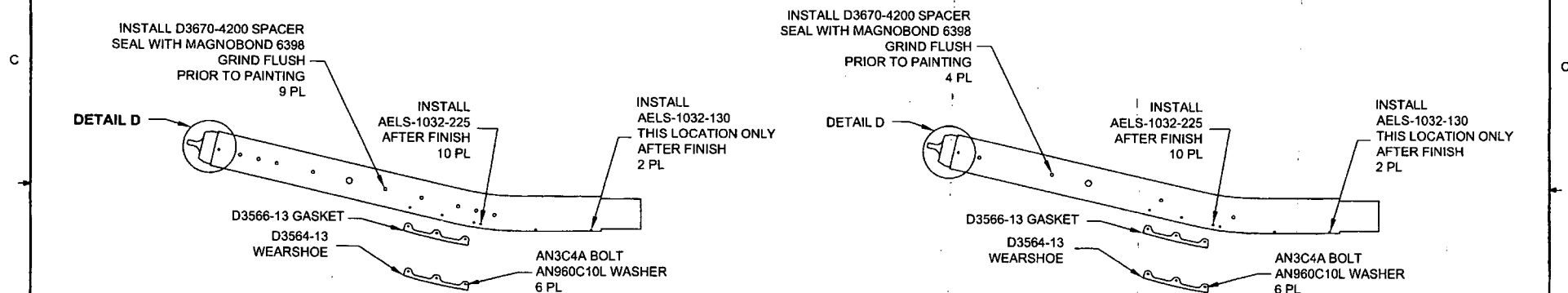
DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. H
MFG. APPR.	<i>[Signature]</i>	D3391	SHEET 3 OF 8
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	412 FLOAT SKIDTUBE	NTS
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W0 56729



**D3391-011 DRILLING DETAIL**

**D3391-021 DRILLING DETAIL**



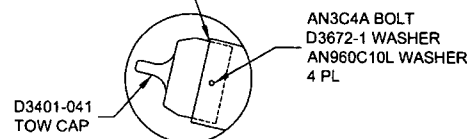
**D3391-011 ASSEMBLY DETAIL**

**D3391-021 ASSEMBLY DETAIL**

**D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST**

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X	X	D3391-011	FWD TUBE ASSEMBLY
		D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
2	2	AELS-1032-130	INSERT
10	10	AELS-1032-225	INSERT

SEAL WITH  
SIKAFLEX-241/-291



**DETAIL D**  
SCALE 2X

DEO ATTACHED

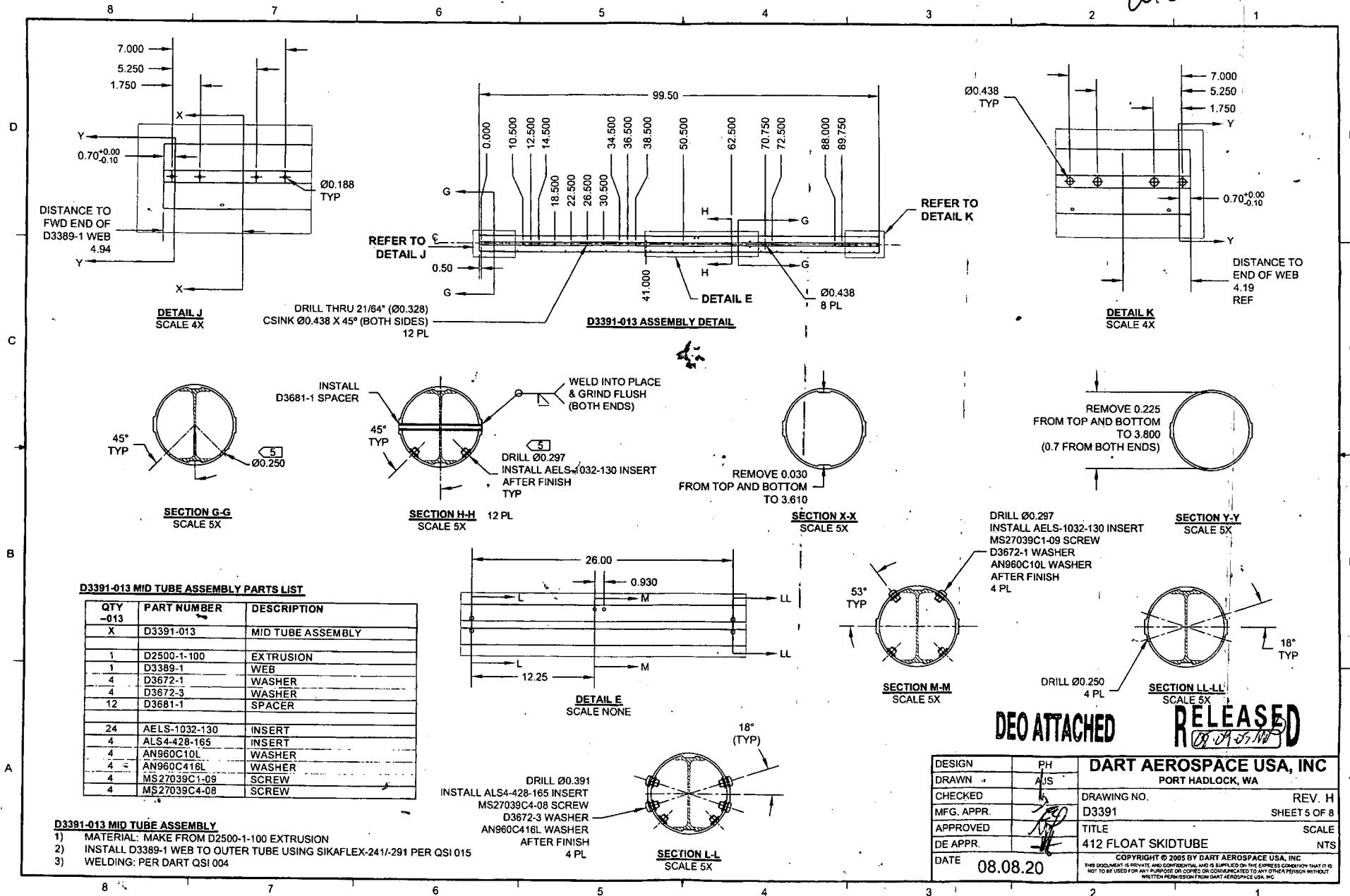
RELEASED  
08-09-2005

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MFG. APPR.			SHEET 4 OF 8
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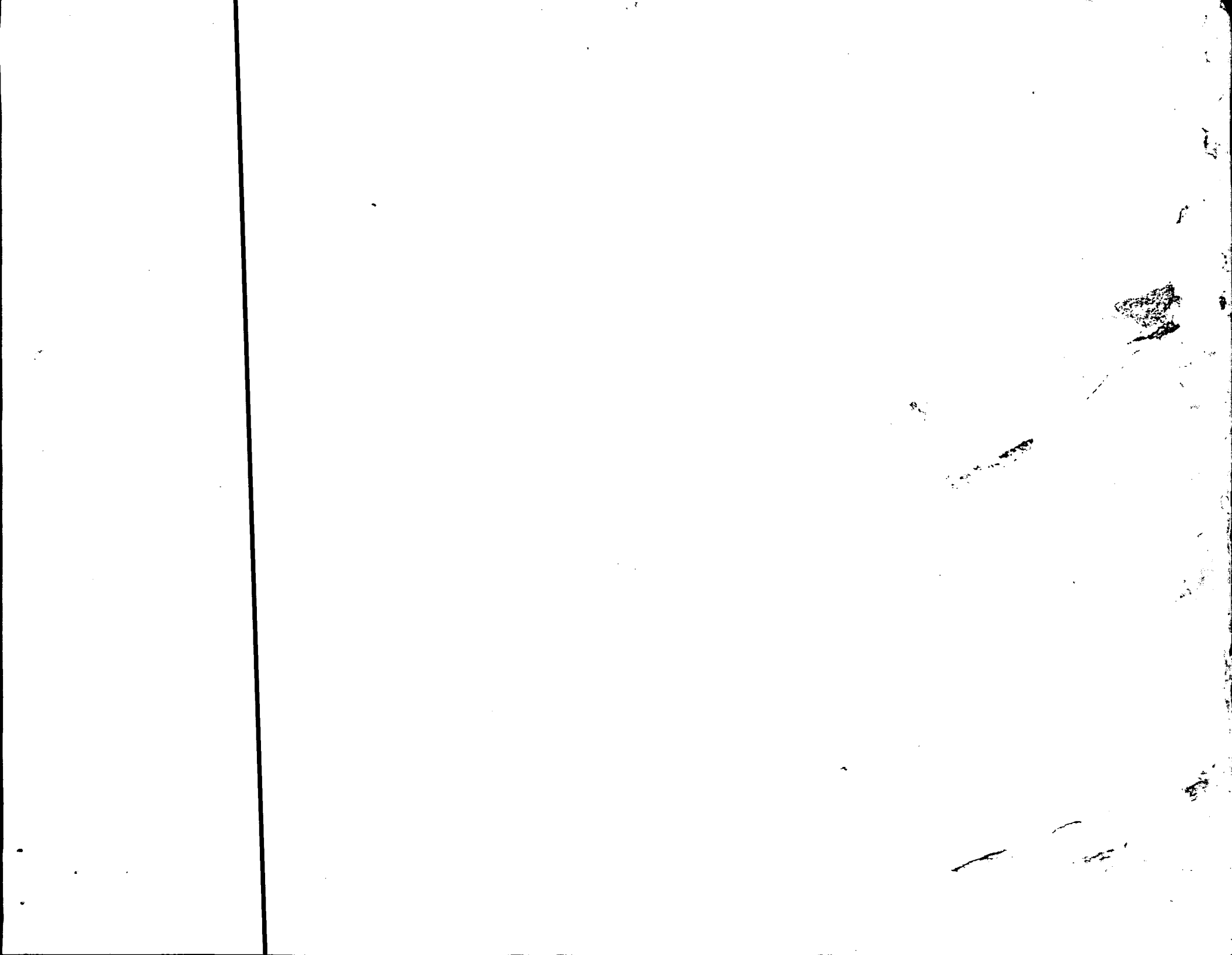


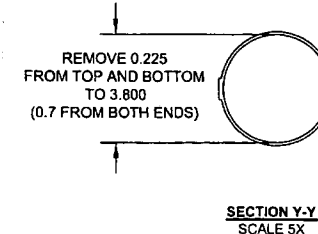
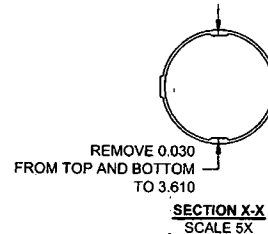
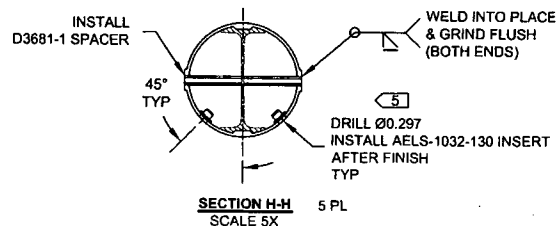
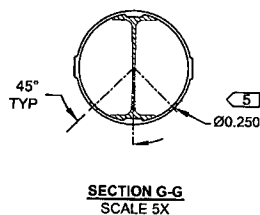
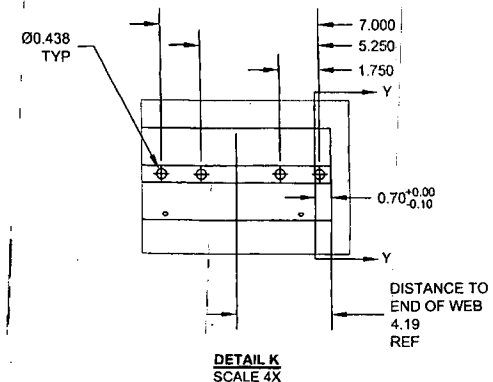
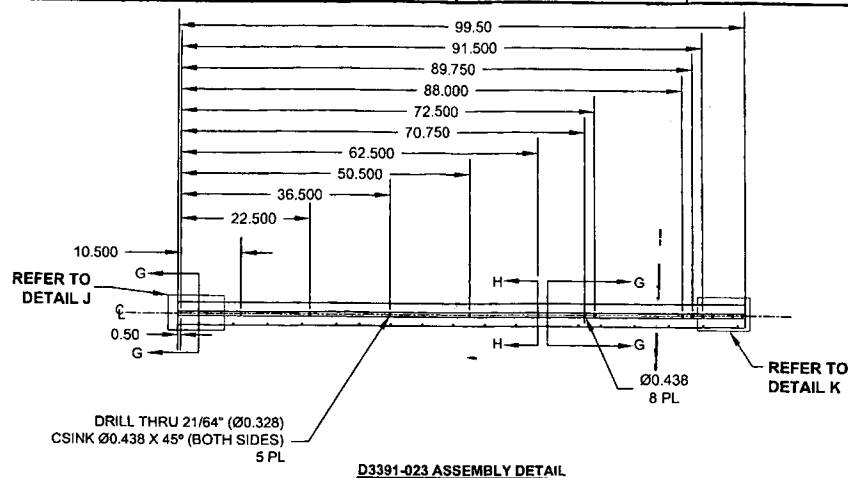
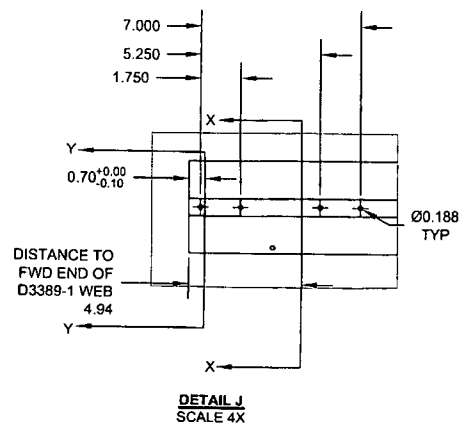
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MFG. APPR.		D3391	SHEET 5 OF 8
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**D3391-023 MID TUBE ASSEMBLY PARTS LIST**

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

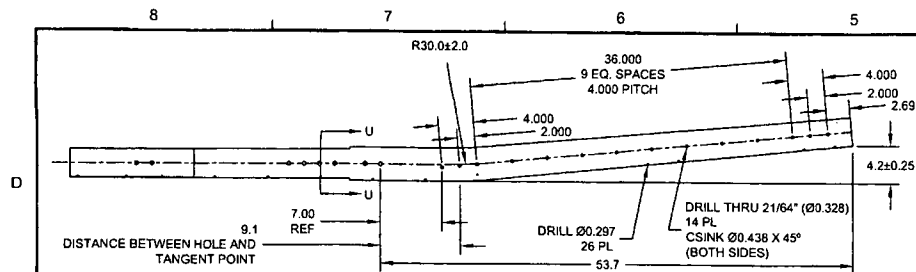
**D3391-023 MID TUBE ASSEMBLY**

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004

DEO ATTACHED  
**RELEASED**  
08-09-05-14

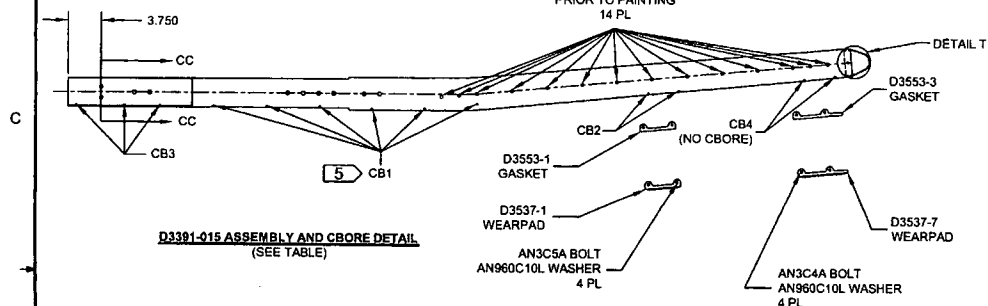
DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 6 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NT
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**D3391-015 BENDING AND DRILLING DETAIL**  
(SEE CBORE DETAIL BELOW)

INSTALL D3670-4200 SPACER  
SEAL WITH MAGNOBOND 6398  
GRIND FLUSH  
PRIOR TO PAINTING  
14 PL



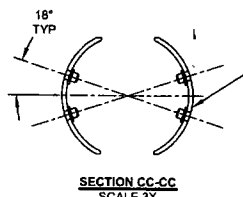
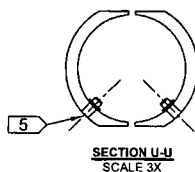
**D3391-015 ASSEMBLY AND CBORE DETAIL**  
(SEE TABLE)

**D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST**

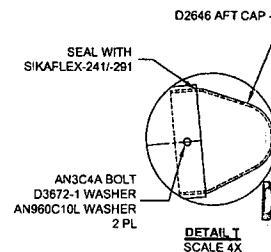
QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER

CBORE HOLES MARKED CB1-CB4 AS FOLLOWS AND  
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

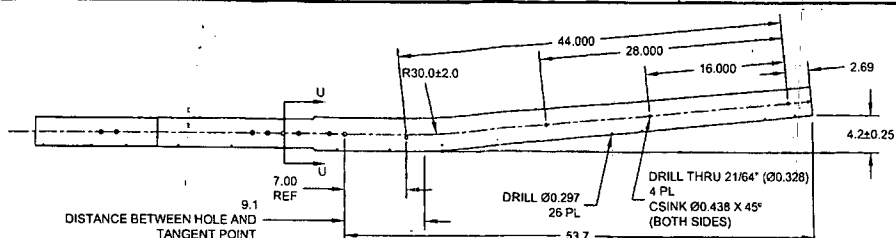
HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130



DRILL Ø0.391  
CBORE Ø0.516 X 0.040 DEEP  
INSTALL ALS4-428-165 INSERT  
4 PL

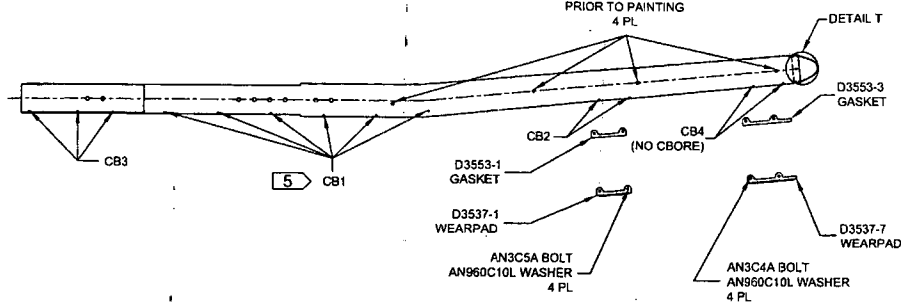


**D3391-025 ASSEMBLY AND CBORE DETAIL**  
(SEE TABLE)



**D3391-025 BENDING AND DRILLING DETAIL**  
(SEE CBORE DETAIL BELOW)





INSTALL D3670-4200 SPACER  
SEAL WITH MAGNOBOND 6398  
GRIND FLUSH  
PRIOR TO PAINTING  
4 PL



WLB 56729

DEO ATTACHED

RELEASED  
08-09-05 MJD

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 8 OF 8
APPROVED		TITLE	SCALE
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DRAWING NO. D3391	TITLE 412 FLOAT SKIDTUBE	REV. H	DART AEROSPACE USA, INC ENGINEERING ORDER		D.E.O. NO. D3391-H-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>CP</i>	CHECKED <i>h</i>	MFG. APPR. <i>MA</i>	APPROVED <i>MP</i>	DE APPR. <i>MP</i>			
DATE 09.09.23	DATE 04.04.24	DATE 09/09/25	DATE 09/09/30	DATE 09/09/30			

**PURPOSE:**

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

**CHANGE:**

AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

- 2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH~~  
~~AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH~~  
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
OFF POWDER COATING WITH MEK DEGREASER.

**RELEASED**  
2010-02-02  
*MP*

*w/d 56729*

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<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 56729
<b>Description:</b> Float Skidtube (412)		<b>Part Number:</b> D3391-3
<b>Inspection Dwg:</b> D3391	<b>Rev:</b> H	<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
14.000	+/-0.010					
3.500	+/-0.010					
88.93	+/-0.030					
44.995	+/-0.030					
Ø3.200	+/-0.010					
88.93	+/-0.030					
Ø3.750	+/-0.010					
30° x 160° chamfer	+/-0.010					

**Measured by:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Audited by:** \_\_\_\_\_ **Date:** \_\_\_\_\_

HAAS Section						
1.526	+0.000/-0.030					
7.500	+/-0.010					
27.750	+/-0.010					
31.750	+/-0.010					
35.250	+/-0.010					
3.300	+/-0.010					
0.200	+/-0.010					
3.520	+/-0.010					
0.687	+0.010/-0.000					
R0.062	+/-0.010					
Ø0.484	+0.005/-0.001					

**Measured by:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Audited by:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	
F	09.04.27	Dimensions updated per Rev H and NCR09-028	KJ/JLM	
G	09.11.16	Dimension 0.200 removed	KJ	





NO. 224

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Bardley Elliott  
Job number: 53938  
Part number: D3391-023  
Description: Hot Mid tube  
Welding Process: Tig[☒] Mig[ ]  
Base material: Aluminium  
Current: AC[☒] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[ ]  
Penetration: pass[☒] fail[ ]

UNACCEPTABLE

Cracks: pass[☒] fail[ ]  
Undercut: pass[☒] fail[ ]  
- Pin holes: pass[☒] fail[ ]  
Overlap (cold lap): pass[☒] fail[ ]  
Porosity (surface): pass[☒] fail[ ]  
Coloration: pass[☒] fail[ ]

Qualifier [Signature] Date of Test Coupon 10-02-18

Welder [Signature] Date of Test Coupon 10-02-18

The above named individual is qualified in accordance with AWS D17.1.2001 to weld